ENERGY POLICY UPDATE

June 17, 2014

The Energy Policy Update Electronic Newsletter is published by the Arizona Governor's Office Of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by Community Outreach Personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

UPCOMING WEBINARS

- ENERGY STAR Webinars
- U.S. Dept. of Energy Tribal Renewable Energy Webinar Series for 2014

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The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

Arizona May Fight EPA Rules; Nevada a Step Ahead

[Energy Prospects West, June 10] The U.S. Environmental Protection Agency's proposed carbon-dioxide rule would require Arizona to reduce its CO_2 emissions by 52 percent to 702 lbs/net MWh by 2030, down from 1,453 lbs/MWh in 2012. However, Arizona public officials appear poised to fight the proposal rather than try to comply with it, according to conservation groups. Henry Darwin, director of the Arizona Department of Environmental Quality, has already mentioned the possibility of suing to stop the rule. "We need a healthy discussion about creating a sustainable energy future for Arizona at the same time we consider all of our other potential responses, including challenging EPA's legal authority to set the standards if the proposed rule goes final," Darwin said in a statement. The Arizona Corporation Commission said it is reviewing the EPA proposal "with an eye toward determining the impact [it] may have on power plants within the state, the ability of power companies to continue to provide reliable service, and any jobs that could be affected." The ACC added: "Most importantly, the commission takes very seriously its responsibility to protect Arizona's ratepayers."

Arizona's Super Bowl Includes Environmental Efforts

[Arizona Republic, June 8] The tens of thousands of people who will descend on Arizona in February for the Super Bowl will leave a carbon footprint on the road and in the skies, along with tons of trash, but the National Football League will endeavor to soften the blow. The nation's most popular sporting event brings with it an environmental agenda, from planting trees and investing in renewable energy to sowing seeds of sustainable thinking among football fans. "It's not so much about how much of the problem do you create; it's about how much of the problem are you willing to take responsibility for," said Jack Groh, director of the NFL Environmental Program. That problem includes air pollution and carbon emissions from travelers going to the Super Bowl; waste generated at myriad events, including the game itself; and the energy used to power the stadium for the big event. The sports industry as a whole is showing greater awareness and concern for the environment, with more than half the teams in North America's major sports leagues adopting energy-efficiency programs. Fifteen stadiums or arenas have Leadership in Energy and Environmental Design, or LEED, certifications, and 18 have installed on-site solar arrays, according to a 2012 Natural Resources Defense Council report. And that, according to a senior scientist with the council, is a powerful venue to persuade the American public about sustainable practices.

Kinder Morgan Gives Altar Valley Group $1M for Pipeline Support

[Arizona Daily Star, June 6] An Altar Valley conservation group has reached a financial agreement with Kinder Morgan and will withdraw opposition to the company's Sierrita gas pipeline. Kinder

Morgan has agreed to give the Altar Valley Conservation Alliance $1 million to use for conservation work in the area, which will be the site of a proposed 60-mile pipeline that will carry natural gas from Tucson to Sasabe and into Mexico. The conservation alliance previously opposed the proposed pipeline, saying it'll further damage pristine land in the Altar Valley, southwest of Tucson, and create a new smuggling corridor. The group also said they didn't believe Kinder Morgan's plan to replant native vegetation along the pipeline would be adequate to mitigate the damage. Pima County officials, area ranchers and other groups also disapprove of the pipeline, sharing the same concerns as the alliance. But the tide seems to be turning as the project moves closer to becoming a reality. The conservation alliance decided to withdraw its opposition and accept the money so the group could move on with its mission, said Program Director Sarah King. The group still doesn't believe Kinder Morgan recognizes the project's adverse environmental impacts, King said.

Sabotage at Nogales Station Puts Focus on Threats to Grid

[Arizona Republic, June 13] The FBI is investigating whether a makeshift bomb placed next to a 50,000-gallon diesel tank at an Arizona power station Wednesday has any connection to a suspicious incident this year at another substation owned by the same company. New details are emerging from the Nogales, Ariz., attack, which caused minor damage and no injuries. Contrary to initial accounts, the bomb did not explode. Nogales police Lt. Carlos Jimenez described it as a crude incendiary device that could fit in a person's hand. It was placed under the valve of the diesel tank and ignited, charring the steel tank. "They were able to gain access to the facility illegally," Jimenez said. "They had some working knowledge of what that tank is or how it works." The attackers failed to understand that diesel has a high flash point and is difficult to ignite. Police identified no suspects or witnesses. They said there were no signs of vandalism common with domestic extremist groups such as the Earth Liberation Front, or ELF. The FBI has designated the ELF as a domestic terrorism group, which the bureau blames for arson attacks on homes, power facilities and other symbols of urbanization. Nogales officials called the FBI, the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives and the state Department of Public Safety for help. Those agencies would not comment, citing the ongoing investigation. Police said they believe the saboteurs got into the substation sometime between 4 p.m. Tuesday, when maintenance workers locked it and left, and 8 a.m. Wednesday, when workers returned to monitor the plant.
Had there been a catastrophic explosion, as many as 30,000 customers could have lost power, Jimenez said.

Tucson, Other Cities Could Be Hit by CAP Shortage Much Sooner Than Expected

[Arizona Daily Star, June 15] For the first time, the state agency that operates the multibillion-dollar Central Arizona Project warns that water shortages could hit Tucson and Phoenix as soon as five years from now. Chances are slim a shortage will come that soon, but they're expected to rise in the next few years due to drought, growing water demand and declining water levels in Lake Mead at the Nevada border. Over a 10-year period ending in 2026, the likelihood of urban CAP shortages is 17 to 29 percent in a given year depending on weather, particularly the impacts of climate change, CAP says. Such shortages would occur if Lake Mead, now about 1,085 feet elevation, drops below 1,000 feet. Then the lake becomes what CAP calls a "dead pool" in which operations are sharply curtailed.

UNS Buyout Gets Mostly Cheers at Hearing

[Arizona Daily Star, June 17] The planned buyout of Tucson-based UNS Energy Corp. by Canadian utility giant Fortis Inc. won the endorsement of key parties at formal hearings on the deal that opened Monday. But the parent of Tucson Electric Power Co. and its suitor still faced some questions about the $4.3 billion deal, including queries about the recent closure of a UNS office in Nogales. Under a deal announced in December, Fortis would acquire UNS Energy in a cash deal worth $60.25 per share, or about $4.3 billion including the assumption of about $1.8 billion in debt. In a settlement agreement unveiled in May, Fortis has agreed to 66 conditions, including agreeing to provide $30 million in customer billing credits over five years, as well as an immediate equity injection of $220 million. Besides giving shareholders a premium on their shares, UNS says joining Fortis would improve its access to capital needed to fund a move away from a reliance on coal, including the planned purchase of a gas-fired plant in Gila Bend, as well as boost investment in other infrastructure improvements.

ALTERNATIVE ENERGY & EFFICIENCY

Google Said To Plan Energy Push with Tools for Utilities

Google Inc. (GOOG) plans a deeper push into the $363.7 billion U.S. power-sales market by working on tools that help utilities deliver electricity to homes and businesses more efficiently, people with knowledge of the matter said. The operator of the most popular Internet-search engine

is in the early stages of building software and hardware tools to manage power lines and other infrastructure, said the people, who asked not to be identified because the matter is private. The technology is being developed by Google's Energy Access team and led by Arun Majumdar, vice president of the company's energy unit, the people said. Google, a big consumer of electricity for the computer servers that power its services, is looking at ways to transform the century-old utility industry, which has been struggling to adapt to changing demands for power management and production. As solar, wind and other renewable energy sources come online, the power grids that transmit electricity will need to be more flexible and efficient. "They recognize there is a huge wide-open space and that the utility companies are not stepping up to the plate," Steven Chu, former secretary of the U.S. Department of Energy, said of Google during an interview last month at an energy conference in Fremont, California. "They see a huge market opportunity." Solar panels stand at the Ivanpah Solar Electric Generating System in the Mojave Desert near Primm, Nevada, U.S., on Monday, March 10, 2014. The 392-megawatt California Ivanpah plant developed by Google, NRG and Bright Source, which began operating in February, brings utility-scale solar to more than 5.5 gigawatts, up 1,089% since 2010. Chu said he isn't familiar with Google's plans and was expressing his views on what the company might do. Kelly Mason, a spokeswoman for Mountain View, California-based Google, declined to comment on its energy project and who is handling the effort. The shares of Google fell less than 1 percent to $558.84 at the close in New York.

NREL Verifies First Federal Net-Zero Energy Building

[Energy Manager Today, June 10] The Energy Department's National Renewable Energy Laboratory (NREL) recently verified the first year of net-zero energy performance of its Research Support Facility (RSF) building. RSF is the first federal building verified to achieve net-zero energy performance. The RSF is a LEED Platinum-certified 360,000-sq-foot office building that houses about 1,300 NREL and Energy Department staff as well as a data center. It accomplished net-zero energy through a combination of energy efficiency technologies used in the building, effective operations and management of the building, as well as onsite electricity generation from a 2.6 MW solar PV system on the roof of the building and adjacent parking areas. Like the rest of the NREL campus, the RSF was designed and built with the intention of being a model for how building projects can incorporate energy efficiency strategies and technologies, and in the case of the RSF how projects can be made to be net-zero energy ready. The NREL researchers involved in the project made it accessible to anyone by compiling and documenting their experiences in energy performance-based commercial building acquisition and the adoption of energy-saving building technologies.

Waste-To-Energy, Biomass Just Two Alternatives to Fossil Fuels

[Fierce Energy, June 6] The U.S. Environmental Protection Agency (EPA) has released its first-ever proposed rule limiting carbon dioxide pollution from existing power plants, concerning many fossil-fueled plant operators. But environmentalists and others are confident that renewable energy sources can help meet a potential mandate. Renewable energy has already cut energy costs and made progress toward reducing carbon emissions, but they have even more untapped potential, according to advocates, helping states make even more significant reductions, saving consumers money and driving local economic development. Over the last few years, wind, solar, biomass, waste-to-energy and other renewable energy technologies have experience record growth and a major reduction in costs. For example, waste-to-energy is a successful greenhouse gas mitigation tool relied upon by the European Union and harnessing significant potential for further deployment in the United States, which currently has 85 waste-to-energy facilities that have added more than $5 billion to the U.S. economy. In fact, every ton of municipal solid waste processed at a waste-to-energy facility reduces lifecycle GHG emissions by one ton of carbon dioxide equivalents, according to the EPA. In addition, the National Climate Assessment -- released by the White House in May -- noted the potential for bioenergy to displace up to 30 percent of current U.S. petroleum consumption, while improving forest health. As a reliable base load power source that generates electricity around the clock, biomass is a practical and adaptable solution to either complement or replace fossil fuels. Further, solar panel energy's costs have declined as much as 60 percent and wind energy has driven up to $25 billion in private investment in a single year.

ENERGY/GENERAL

Corn Growers Face Pressure on Sustainable Farming

[USA Today, June 11] Des Moines, IA – Corn growers will most likely face growing corporate pressure to raise crops more sustainably, according to a group that released an environmental assessment critical of the U.S. industry Wednesday. The report said corn producers face risks from climate change, unsustainable water use and "inefficient and damaging fertilizer practices."

That threatens the companies that rely on them. Giant food companies are beginning to ask farmers to adopt growing practices that reduce fertilizer use and better protect soil and water, said Ceres, a nonprofit group of investors, businesses and others that support sustainable business practices. Coca-Cola, General Mills and Unilever have set goals to sustainably source all of their priority ingredients — such as corn and sugar beets — by 2020. "Sustainability in agriculture is really important to us, as we think about production in the future and having to feed 9 billion to 10 billion people, and doing so on a finite planet with natural resources under a lot of constraints," said Jerry Lynch, General Mills' sustainability officer. "We depend on agriculture and Mother Nature to run our business. As that starts to break down, our business becomes either very expensive or it could become nonviable," he said. More companies are expected to follow, said Brooke Barton, who directs Ceres' water program. The report asks retailers, food processors and feed companies to set sustainability goals and push farmers to meet them.

Japan To Open Residential Power Market to Competition

* *Change frees up $73 billion market to all suppliers*
* *Reforms are part of PM Shinzo Abe's structural change plans*
* *Independent supplier registrations are surging (Adds comment, detail on legislation)*

[Reuters, June 11] TOKYO – Japanese lawmakers voted overwhelmingly on Wednesday to open up the residential electricity market to full competition, the latest step in a radical shakeup of the power industry in the wake of the Fukushima nuclear disaster. The change frees up a 7.5 trillion yen ($73 billion) market to all companies from around 2016, allowing them to sell electricity and other services to almost 77 million households and 7.4 million small business, according to government figures. The move will expose Japan's 10 regional power monopolies to new competition after the government seized on public anger over shortcomings brought to light by the 2011 tsunami and meltdowns at the Fukushima Daiichi station to reform the industry.
Winners include new operators who have been entering the market with leaner operations, lower overheads and new technologies. Investment in solar energy has surged after the introduction of new tariffs to encourage the industry.

Tracking Critical Energy Infrastructure in the Path of Destruction

[Fierce Energy, June 12] The 2014 hurricane season is now underway, and the U.S. Energy Information Administration (EIA) is making it possible to track the power plants, oil refineries, major electric transmission lines, and other critical energy infrastructure that are in the path of potentially devastating weather activity from all types of mobile devices and tablets -- using the EIA's Energy Mapping System and Energy Disruptions web page. NOAA, the National Oceanographic and Atmospheric Administration, projects with 70 percent certainty that there will be between eight and 13 named storms from June to November 2014, of which three to six will strengthen to hurricanes, and one or two will become major hurricanes. EIA's interactive Energy Disruptions web page provides real-time data feeds from NOAA's National Hurricane Center, including the projected path and intensity of tropical storms and hurricanes, enabling users to assess the overlap between storm tracks and more than 40 map layers showing the location of energy infrastructure.

UglyGorilla Hack of U.S. Utility Exposes Cyberwar Threat

[Bloomberg, June 12] Somewhere in China, a man typed his user name, “ghost,” and password, “hijack,” and proceeded to rifle the computers of a utility in the Northeastern U.S. He plucked schematics of its pipelines. He copied security-guard patrol memos. He sought access to systems that regulate the flow of natural gas. He cruised channels where keystrokes could cut off a city’s heat, or make a pipeline explode. That didn’t appear to be his intention, and neither was economic espionage. While he was one of the Chinese officers the U.S. charged last month with infiltrating computers to steal corporate secrets, this raid was different. The hacker called UglyGorilla invaded the utility on what was probably a scouting mission, looking for information China could use to wage war. UglyGorilla is one of many hackers the FBI has watched. Agents have recorded raids by other operatives in China and in Russia and Iran, all apparently looking for security weaknesses that could be employed to disrupt the delivery of water and electricity and impede other functions critical to the economy, according to former intelligence officials with knowledge of the investigation. The incursions spurred a debate in the Obama administration over whether and how to respond, and raised alarms among lawmakers briefed on the incidents.

INDUSTRIES AND TECHNOLOGIES

Abengoa To Develop New Solar-Thermal Storage Technology in Collaboration with the US National Renewable Energy Laboratory (NREL) and the Colorado School of Mines

-The research program will achieve a reduction in costs of solar-thermal technology while increasing efficiency.

-The US Department of Energy will finance the project with €1.3 million.

[PR Newswire, June 10] WASHINGTON – Abengoa, the international company that applies innovative technology solutions for sustainability in the energy and environment sectors, together with the National Renewable Energy Laboratory (NREL) and the Colorado School of Mines (CSM), has been selected by the US Department of Energy (DOE) to develop a new solar storage technology for thermo-electric plants. The program will last for two years and will require an investment of €1.3 million by the US Department of Energy. Abengoa will be responsible for leading the systems integration work and the technical-financial analysis, focusing on the commercial potential of this technology in future solar plant projects. The capacity to generate electricity on demand, making it manageable, is one of the most important characteristics of solar-thermal energy compared to other types of renewable energy. The storage system enables clean energy to be produced at maximum output without using the solar field, which can be used to supply peak demand times during the day. This manageability also solves the problems of intermittency inherent in other renewable energies, such as wind or photovoltaic power, since it enables supply to remain stable, increasing the value of solar-thermal energy. This project is part of the SunShot Initiative carried out by the US Department of Energy, which seeks to promote innovation in order to make the cost of solar power more competitive compared with traditional sources, before the end of the decade

Auto Industry Gets Serious About Lighter Materials

[Associated Press, June 9] Dearborn, MI – While hybrids and electrics may grab the headlines, the real frontier in fuel economy is the switch to lighter materials. Automakers have been experimenting for decades with lightweighting, as the practice is known, but the effort is gaining urgency with the adoption of tougher gas-mileage standards. To meet the government's goal of nearly doubling average fuel economy to 45 mpg by 2025, cars need to lose some serious pounds. Lighter doesn't mean less safe. Cars with new materials are already acing government crash tests. Around 30 percent of new vehicles already have hoods made of aluminum, which can absorb the same amount of impact as steel. Ford gave a glimpse of the future last week with a lightweight Fusion car. The prototype, developed with the U.S. Department of Energy, is about 800 pounds lighter than a typical Fusion due to dozens of changes in parts and materials. Because it's lighter, the prototype can use the same small engine as Ford's subcompact Fiesta, which gets an estimated 45 mpg on the highway. The car won't be in dealerships anytime soon. For one thing, it's prohibitively expensive. Its seats, for example, cost up to $73 apiece because they have carbon fiber frames. The same seats with steel frames are $12.

Ford and Samsung Researching Lithium-Ion Tech for ICE Cars

[GizMag.com, June 5] Lithium-ion batteries are an industry standard for plug-in hybrid and electric vehicles, and Ford is convinced that they will be useful in cars without electric drive motors, too. The automaker is working with Samsung to research a dual-battery system that increases gas vehicle fuel economy. Ford and Samsung SDI, an affiliate of Samsung Group, announced their research efforts this week. The result of 10 years of research, the dual-battery system detailed pairs a traditional 12-volt lead-acid car battery with a lithium-ion battery. The purpose of the supplementary battery is to take advantage of the li-ion battery's quicker recharge-discharge speeds for regenerative braking in non-hybrid vehicles. The dual-battery system powers vehicle systems and accessories in place of the engine when Ford's Auto Start-Stop system kicks in during braking. Meanwhile, the regenerative system captures and stores up to 95 percent of the energy otherwise lost during braking.

SolarCity Gets into Photovoltaic Manufacturing with New Acquisition

[Silicon Valley Business Journal, June 17] Solar panel installer and financier SolarCity has agreed to buy a Silevo, a startup solar cell maker, in a move that launches the company into the solar cell manufacturing market. San Mateo-based SolarCity will pay up to $350 million in stock for the Fremont-based company, whose technology SolarCity said has both a high output and lost cost. SolarCity will pay $200 million in common stock and an additional $150 million if Silevo meets certain operating and expansion milestones, according to an SEC report filed by SolarCity. The move represents big change for SolarCity, which previously had not focused on the manufacturing side of the solar panel industry. The company, which sells financing plan for solar arrays, could use the technology to lower costs.

U.S. Department of Energy Signs $1.05 Million Cooperative Agreement with Southern Research Institute To Develop Advanced High-Temperature Solar Thermal Storage System

[Southern Research Institute, June 5] Birmingham, AL – Southern Research Institute today announced that it has signed a jointly funded cooperative agreement with the U.S. Department of Energy (DOE) as part of the DOE's new Concentrating Solar Power: Efficiently Leveraging

Equilibrium Mechanisms for Engineering New Thermochemical Storage (CSP: ELEMENTS) funding program, part of the SunShot Initiative. CSP: ELEMENTS supports the development of high-temperature thermochemical energy storage (TCES) systems that enable concentrating solar power plants to produce electricity in the evenings and even overnight when the sun is no longer shining. CSP technology employs mirrors that concentrate reflected sunlight onto receivers containing heat transfer fluids. From there, the fluids are used to heat water, which in turn generates steam that is used to power turbines and produce electricity. By adding thermal storage to these facilities they are able to operate at significantly higher capacity factors and produce approximately double the energy for the same size power facility. Furthermore, the production of electricity can be shifted to occur at the same time as peak power demand, making the electricity much more valuable. The Southern Research Institute project will develop a TCES system that uses a low-cost calcium-based sorbent in a reversible closed-loop endothermic-exothermic chemical reaction cycle. The system stores energy during mid-day when sunlight is plentiful in the endothermic step, and then releases energy when the sun is no longer shining during the exothermic step, allowing for electricity to be produced in a more stable and consistent fashion. This TCES system is projected to cost about one-quarter as much as current state-of-the-art molten salt storage systems, and will be able to store the same amount of energy in a system about one-sixth the size.

LEGISLATION AND REGULATION

FERC To Appeal Ruling on Energy Saving Incentives

[The Hill, June 11] The Federal Energy Regulatory Commission (FERC) is appealing a ruling that last month struck down its program to incentivize electricity users to save energy during peak periods. The program, also known as demand response, sought to require electric utilities to pay end users to cut their consumption when demand rises. Such a program can reduce energy use while potentially eliminating the need for new infrastructure and power plants. The Court of Appeals for the District of Columbia Circuit ruled in May that FERC's program "goes too far, encroaching on the states' exclusive jurisdiction to regulate the retail market." FERC's authority only extends to the wholesale electricity market, it said.

Ford Reduces Miles Per Gallon on Six Models

[The Hill, June 12] Ford is reducing the miles per gallon in advertising for six automobile models, company officials announced on Thursday. The company attributed the reduction to errors in its testing of 2013 and 2014 models, including its hybrid vehicles. Ford CEO Alan Mulally said the company was voluntarily releasing the findings because "Ford is absolutely committed to delivering top fuel economy and accurate information. We apologize to our customers and will provide goodwill payments to affected owners," Mullaly said in a statement. "We also are taking steps to improve our processes and prevent issues like this from happening again." The Environmental Protection Agency said Thursday the affected vehicles were Ford's 2014 Fiesta, 2013 and 2014 Fusion, C-Max and Lincoln MKZ hybrids and the 2013 and 2014 Fusion and C-Max Energi plug-in hybrids. The agency said the Fusion hybrid went from an advertised rate of 47 miles per gallon to 42 mpg, while the C-Max hybrid was reduced from 42 mpg to 40 mpg. The changes comes as the Obama administration is gearing up to begin implementing new regulations that will require car manufacturers to increase the average fuel economy of their auto fleets to 54.5 mpg by 2025. The requirement is scheduled to start at 36.6 mpg in 2017.

Winners and Losers with Obama Power Plant Rule

[Associated Press, June 11] NEW YORK — We'll increasingly be turning to companies that can help us waste less electricity — and generate cleaner power with nuclear reactors, natural gas-fired plants, wind turbines and solar panels — in response to the Obama administration's proposed new carbon dioxide limits. The proposed limits will likely help the biggest U.S. natural gas producer, Exxon Mobil, by increasing demand for its fuel, which emits half the carbon dioxide as coal. The biggest nuclear power generator, Exelon, and biggest wind farm operator, Next Era Energy, may fetch higher prices for their carbon-free power. Companies that sell wind turbines, solar panels, or energy efficiency technology — such as General Electric, Siemens, First Solar and SunPower — may also come out winners. Coal stands to be a big loser. Last year 78 percent of carbon dioxide emissions from the electric power sector came from coal. Electric customers will almost certainly pay higher prices, according to several analysts and industry experts, though efficiency measures could reduce the impact of higher prices on power bills. The Obama administration predicts power bills will shrink as a result of the rule. The proposed rule, announced Monday, would require a 30 percent reduction in carbon dioxide from the electric power sector from 2005 levels by 2030. The rule isn't scheduled to become final until next year and it will likely face extensive political and legal challenges.

WESTERN POWER

Concentrated Solar Adds 5 to 6 Cents Value per Kwh, Says NREL

[Clean Edge News, June 12] Concentrating Solar Power (CSP) projects would add additional value of 5 or 6 cents per kilowatt hour to utility-scale solar energy in California where 33 percent renewables will be mandated in six years, a report by the Energy Department's National Renewable Energy Laboratory has found. The report, "Estimating the Value of Utility-Scale Solar Technologies in California Under a 40% Renewable Portfolio StandardPDF," finds that CSP, with its ability to store energy for several hours or more, helps maintain firm capacity in the hours when the sun is below the horizon. Compared to variable generation technologies this translates to an increase in value of 5 cents per kilowatt hour under a 33% renewable standard – the mandate for 2020 – or 6 cents per kilowatt hour under a 40% renewable standard. The added value means that at peak demands, CSP can help lower electricity bills. "CSP adds significant additional value when compared to less flexible generation sources," NREL CSP Group Manager Mark Mehos, co-author with Jennie Jorgenson and Paul Denholm of the study, said. "As the penetration of renewables rises, so does the relative value of CSP. CSP could also allow greater penetration of PV by making the grid more flexible and reducing curtailment of PV by generating energy after the sun sets. We intend to investigate this in more detail for the remainder of this year." While photovoltaic modules capture the sun's light and turns it into useable electricity, CSP technologies concentrate the sun's energy and capture that energy as heat, which then drives an engine or turbine to produce electrical power. However, the thermal energy CSP generates can be held back for several hours via storage systems such as molten salts – and then used after the sun sets when demand is still high for, say, air conditioning, television, and lighting.

Governor Signs Bill Supporting Heavy-Duty Propane, Natural Gas Vehicles

[Next-Gen Transportation News, June 9] Colorado Gov. John Hickenlooper has signed into law H.B.14-1326, a piece of legislation that provides tax credits to fleets that deploy heavy-duty vehicles powered by natural gas or propane. The state already had solid incentives in place for light- and medium-duty natural gas vehicles and propane autogas vehicles, with Hickenlooper having signed into law H.B.1247 last May. H.B.14-1326, however, extends the reach of Colorado's alt-fuel incentives. "The current income tax credit for alternative fuel vehicles does not adequately address heavy-duty alternative fuel vehicles, even though the benefits of their emission reductions and energy security are reported to be significant," the law reads. The bill, which was spearheaded by Reps. Dianne Primavera and Ray Scott, covers heavy-duty vehicles that operate on compressed natural gas (CNG), liquefied natural gas (LNG, propane or hydrogen. Dedicated, bi-fuel and dual-fuel configurations of OEM and converted vehicles are all eligible for the credits.

Interior Announces Nearly $20 Million in WaterSMART Funding for Water and Energy Efficiency Projects and River Basin Studies at Western Governors' Annual Meeting

Funding will help communities in West define options for meeting future water demands, conserve water in face of climate change, and increase the use of renewable energy

[U.S. Dept. of Interior, June 9] Colorado Springs, CO – Addressing the Western Governors' Association today, Secretary of the Interior Sally Jewell announced that the Bureau of Reclamation will make $17.8 million in water and energy efficiency grants available to 36 projects in the western United States and will provide $1.8 million for three river basin studies—for a total of $19.6 million in Federal funding. The announcement is part of the Obama Administration's commitment to do everything it can to help the farmers, ranchers, small businesses and communities being impacted by wildfires, droughts and other effects of our changing climate. The funding comes on the heels of EPA's Clean Power Plan to cut carbon pollution from existing power plants, and the Third National Climate Assessment, the most comprehensive scientific assessment of climate change and its impacts on every region of the United States.

"Climate change is already impacting the Western United States in a variety of ways—from reducing water supplies to changing the time and place of runoff from snowpack," Secretary Jewell said. "Through this funding announced today, Interior is supporting President Obama's Climate Action Plan by providing tools for states and water users to proactively meet future water and energy demands." The water and energy efficiency grants and basin studies are parts of the Department of the Interior's WaterSMART Program. Reclamation selects the projects through a competitive process. The water and energy efficiency grants can be used for projects that conserve and use water more efficiently, increase the use of renewable energy, improve energy efficiency, benefit endangered and threatened species, facilitate water markets, carry out activities to address climate-related impacts on water or prevent any water-related crisis or conflict.

Basin studies are collaborative studies, cost-shared with non-Federal partners, to address how climate change may affect water supply, demand and operations in the future and identify adaptation strategies to address imbalances in water supply and demand. The comprehensive

basin studies funded are those for the Upper Red River Basin in Oklahoma, the Upper Deschutes Basin in Oregon and the Missouri River Headwaters Basin in Montana. To view complete descriptions of the three basin projects, please click here.

Western Governors, NOAA Sign Agreement To Deliver Drought, Extreme Weather Data to States [WGA website, June 9] The Western Governors' Association (WGA) and the National Oceanic and Atmospheric Administration (NOAA) signed a Memorandum of Understanding today (June 9, 2014) in Colorado Springs that renews and strengthens collaboration on drought and flood preparedness. The purpose of the new MOU is to improve the development, coordination and dissemination of drought and extreme weather data, information and analysis in support of resource management decisions in Western states. The agreement was signed in a ceremony during the opening day of the 2014 WGA Annual Meeting in Colorado Springs by NOAA Administrator Dr. Kathryn Sullivan and WGA Chairman and Colorado Gov. John Hickenlooper.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

INCENTIVES

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

- Job Training
- Quality Jobs
- Qualified Facility
- Computer Data Center Program
- Research & Development
- Foreign Trade Zone
- Military Reuse Zone
- Angel Investment
- Renewable Energy Tax Incentive
- Healthy Forest
- Sales Tax Exemption for Machinery and Equipment
- Lease Excise
- Additional Depreciation
- Work Opportunity
- Commercial/Industrial Solar
- SBIR/STTR
- Private Activity Bonds
- QECB's

(ACA) PROGRAMS

DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (DSIRE)

- Arizona Incentives/Policies
- Federal Incentives/Policies
- Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- NEW! Hydrogen and Fuel Cell Technologies - Response due June 30, 2014
- State Energy Program Planning 2014 Competitive Awards - Response due June 30, 2014
- Solar Market Pathways - Concept Paper Submission Deadline: May 28, 2014 5:00 PM ET. Full Application Submission Deadline: July 3, 2014 5:00 PM ET.
- Renewable Energy for America - Close date July 7, 2014
- NEW! Hydrogen Fuel Cell Technologies Incubator - Response due September 3, 2014
- NEW! Manufacturing Machines and Equipment - Response due September 15, 2014
- Secure and Trustworthy Cyberspace - Response due September 19, 2014
- NEW! Nanomanufacturing - Response due October 1, 2014
- Civil Infrastructure Systems - Response due October 1, 2014
- NEW! Energy for Sustainability - Response due October 30 ,2014
- Sunshot "Race to the Roof" Initiative - Registration due October 31, 2014
- Energy, Power, and Adaptive Systems - Close Date: November 3, 2014
- NEW! National Robotics Initiative - Response due November 14, 2014
- NSF/DOE Partnership on Advanced Frontiers in Renewable Hydrogen Fuel Production Via Solar Water Splitting Technologies 2014-2016 - Close Date: Dec. 11, 2014
- Energy for Sustainability - Response Due: February 19, 2015
- Solar Market Pathways - Response due July 3, 2015
- Advanced Fossil Energy Projects - Solicitation Number: DE-SOL-0006303 Expiration Date: November 30, 2016
- Energy Department Announces Next Phase of L Prize Competition to Create Innovative Energy-Saving Lighting Products – Notification of Intent to Submit Product minimum of 30 days, but no more than 45 days prior to product submission. Monetary prize goes to the first successful entrant with the earliest timestamp.
- Repowering Assistance Program - Ongoing
- Rural Business Enterprise Grants - Ongoing
- Rural Business Opportunity Grants - Ongoing
- Sustainable Agriculture Research and Education Grants - Ongoing
- Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines
- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- Green Refinance Plus - Ongoing

ENERGY-RELATED EVENTS

2014

- AZBio Expo 2014
  June 19, 2014 Scottsdale, AZ

- 32nd Annual West Coast Energy Management Congress
  June 25-26, 2014 Seattle, WA

- Solar 2014: 43rd Annual Conference
  July 6-10, 2014 San Francisco, CA

- Renewable Energy Development on Federal Lands 2014
  July 16-17, 2014 Denver, CO

- HydroVision International
  July 22-25, 2014 Nashville, TN

- Biomass 2014: Growing The Future Bioeconomy
  July 29-30, 2014 Washington, DC

- National Geothermal Summit
  August 5-6, 2014 Reno, NV

- Microgrid Development for Public & Private Sectors
  August 12-14, 2014 San Diego, CA

- 2014 ACEEE Summer Study on Energy Efficiency in Buildings
  August 17-22, 2014 Pacific Grove, CA

- EPI's 4th Annual Energy Policy Research Conference
  September 4-5, 2014 San Francisco, CA

- HTUF 2014 National Meeting - The Forum for Action in High-Efficiency Commercial Vehicles
  September 22-24, 2014 Argonne, National Lab - Argonne, IL

- Geothermal Energy Expo
  September 28-October 1, 2014 Portland, OR

- Solar Power International
  October 20-23, 2014 Las Vegas, NV

- GreenBuild International Conference & Expo
  October 22-24, 2014 New Orleans, LA

- World Bio Markets USA
  October 27-29, 2014 San Diego, CA

- Governor's Celebration of Innovation
  November 13, 2014 Phoenix, AZ

- Solar Power Generation USA 2015
  February 4-5, 2015 San Diego, CA

- ASU Sustainability Series Events

- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ